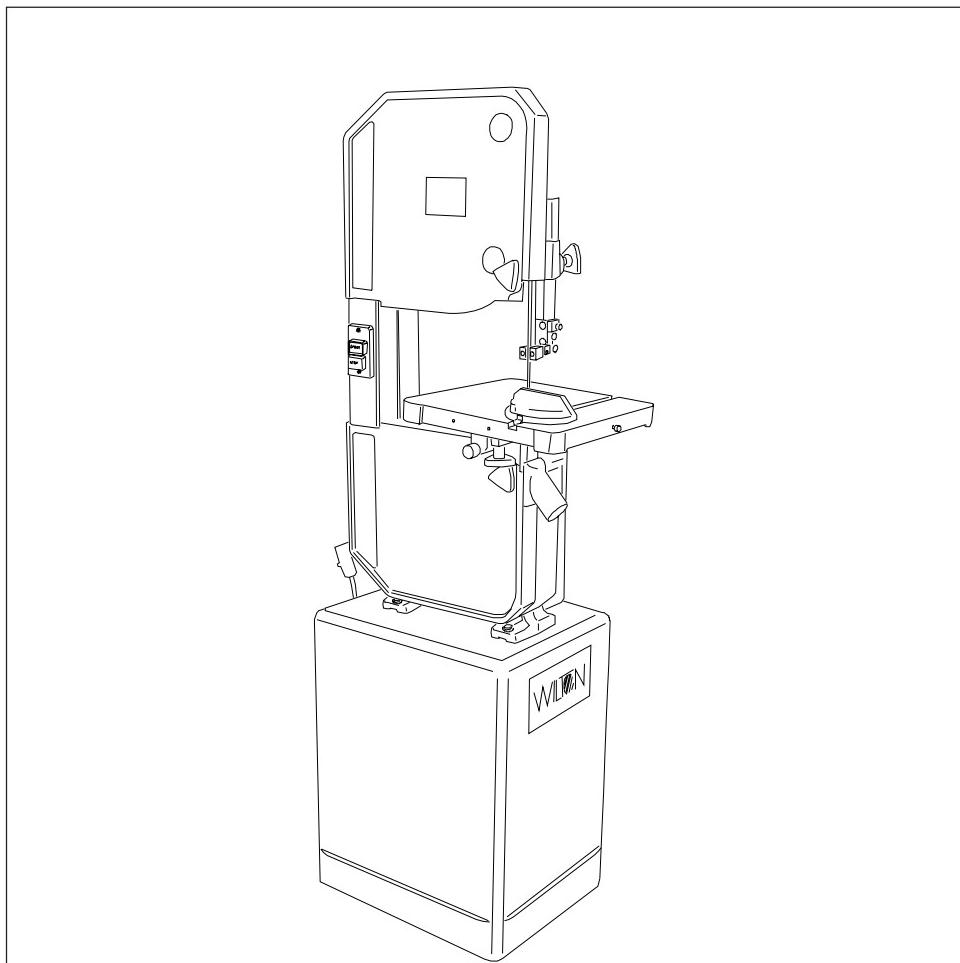




Operating Instructions — Parts Manual

14-Inch Vertical Band Saws

Models: 8201, 8203, 8201VS and 8203VS



WHM TOOL GROUP
2420 Vantage Drive
Elgin, Illinois 60123
Ph.: 800-274-6848
www.wmhtoolgroup.com

Part No. 9078171
Revision C2 04/07
Copyright © 2007 WMH Tool Group

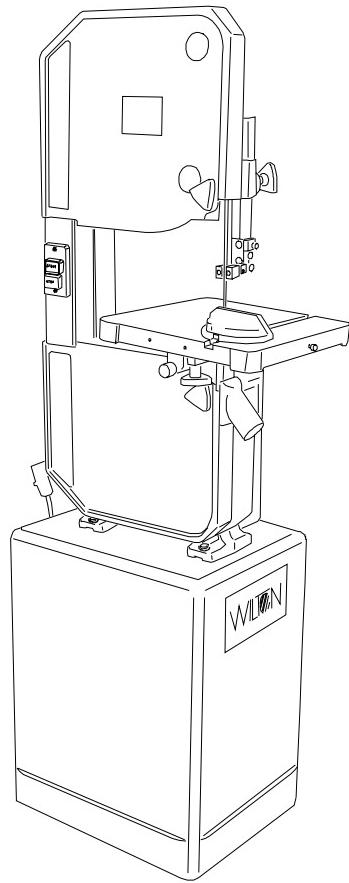
Table of Contents

Cover Page	1
General Specifications	4
Operating Precautions	5
Set-up and Operation	7
Wiring Diagrams	8
Operating Instructions	10
Maintenance	14
Troubleshooting	18
Replacement Parts	19

General Specifications

Wilton's 14-inch Tradesman Vertical Band Saws are specially designed to effectively cut a variety of materials including wood, plastic, bakelite, composites, ferrous and non-ferrous metals. Models 8201 and 8203 are wood and metal cutting band saws.

Wilton's Model 8201VS and 8203VS 14-inch Tradesman Variable Speed Band Saws are ideally suited for metal cutting only with an infinitely variable speed range from 116 to 334 SFPM. The variable speed drive system allows the operator to fine-tune the blade speed to the material being cut to maximize the life of today's bi-metal blades. These versatile and dependable saws are capable of contour cutting, straight cutting and re-sawing, and these band saws can cut delicate curves in thick or thin stock.



Specifications

4

Capacity	<u>8201</u>	<u>8203</u>	<u>8201VS</u>	<u>8203VS</u>
Standard	6-in. under guide	6-in. under guide	6-in. under guide	6-in. under guide
With 12-in. Riser	12-in. under guide	12-in. under guide	12-in. under guide	12-in. under guide
Blade to frame	13.5-in.	13.5-in.	13.5-in.	13.5-in.
Motor				
Rating	1 HP 1-Ph	1 HP 3-Ph	1 HP 1-Ph	1 HP 3-Ph
Voltage	115 vac	220/440 vac	115 vac	220/440 vac
Speed	1725 rpm	1725 rpm	1725 rpm	1725 rpm
Cutting Speeds				
Wood (SFPM)	3300	3300	2600	2600
Metal (SFPM)	39, 57, 78, 107,	39, 57, 78, 107,	116 – 334	116 – 334
	142, 196, 278	142, 196, 278	Variable Speed	Variable Speed
Dimensions				
Length	20 Inches	20 Inches	20 Inches	20 Inches
Width	16 Inches	16 Inches	16 Inches	16 Inches
Height	66 Inches	66 Inches	66 Inches	66 Inches
Height from Floor	66 Inches	66 Inches	66 Inches	66 Inches
Table Tilt to Right	45 Degrees	45 Degrees	45 Degrees	45 Degrees
Table Tilt to Left	10 Degrees	10 Degrees	10 Degrees	10 Degrees
Miter Gauge Groove				
Width	3/4-Inch	3/4-Inch	3/4-Inch	3/4-Inch
Depth	3/8-Inch	3/8-Inch	3/8-Inch	3/8-Inch
Miter Gauge	Standard	Standard	Standard	Standard
Blade Dimension				
Standard	3/8x0.025x92.5 In.	3/8x0.025x92.5 In.	3/8x0.025x92.5 In.	3/8x0.025x92.5 In.



WARNING

- Misuse of this machine can cause serious injury.
- For safety, machine must be set up, used and serviced properly.
- Read, understand and follow instructions in the Operating Instructions and Parts Manual which was shipped with your machine.

When Setting up Machine:

- Always avoid using machine in damp or poorly lighted work areas.
- Always be sure the machine support is securely anchored to the floor or the work bench.

When Using Machine:

- Always wear safety glasses with side shields (See ANSI Z87.1)
- Never wear loose clothing or jewelry.
- Never overreach - you may slip and fall.

When Servicing Machine:

- Always disconnect the machine from its electrical supply while servicing.

- Always follow instructions in Operating Instructions and Parts Manual when changing accessory tools or parts.

- Never modify the machine without consulting Wilton Corporation.

You - the Stationary Power Tool User - Hold the Key to Safety.

Read and follow these simple rules for best results and full benefits from your machine. Used properly, Wilton's machinery is among the best in design and safety. However, any machine used improperly can be rendered inefficient and unsafe. It is absolutely mandatory that those who use our products be properly trained in how to use them correctly. They should read and understand the Operating Instructions and Parts Manual as well as all labels affixed to the machine. Failure to follow all of these warnings can cause serious injuries.

Machinery General Safety Warnings

1. Always wear protective eye wear when operating machinery. Eye wear shall be impact resistant, protective safety glasses with side shields which comply with ANSI Z87.1 specifications. Use of eye wear which does not comply with ANSI Z87.1 specifications could result in severe injury from breakage of eye protection.
2. Wear proper apparel. No loose clothing or jewelry which can get caught in moving parts. Rubber soled footwear is recommended for best footing.
3. Do not overreach. Failure to maintain proper working position can cause you to fall into the machine or cause your clothing to get caught pulling you into the machine.
4. Keep guards in place and in proper working order. Do not operate the machine with guards removed.
5. Avoid dangerous working environments. Do not use stationary machine tools in wet or damp locations. Keep work areas clean and well lit.
6. Avoid accidental starts by being sure the start switch is OFF before plugging in machine.
7. Never leave the machine running while unattended. Machine shall be shut off whenever it is not in operation.
8. Disconnect electrical power before servicing.

Whenever changing accessories or general maintenance is done on the machine, electrical power to the machine must be disconnected before work is done.

9. Maintain all machine tools with care. Follow all maintenance instructions for lubricating and the changing of accessories. No attempt shall be made to modify or have makeshift repairs done to the machine. This not only voids the warranty but also renders the machine unsafe.
10. Machinery must be anchored to the floor.
11. Secure work. Use clamps or a vise to hold work, when practical. It is safer than using your hands and it frees both hands to operate the machine.
12. Never brush away chips while the machine is in operation.
13. Keep work area clean. Cluttered areas invite accidents.
14. Remove adjusting keys and wrenches before turning machine on.
15. Use the right tool. Don't force a tool or attachment to do a job it was not designed for.
16. Use only recommended accessories and follow manufacturers instructions pertaining to them.
17. Keep hands in sight and clear of all moving parts and cutting surfaces.
18. All visitors should be kept at a safe distance from the work area. Make the workshop completely

safe by using padlocks, master switches, or by removing starter keys.

General Electrical Cautions

This saw should be grounded in accordance with the National Electrical Code and local codes and ordinances. This work should be done by a qualified electrician. The saw should be grounded to protect the user from electrical shock.

Wire Sizes

Conductor Length	AWG (American Wire Gauge) Number	
	240 Volt Lines	120 Volt Lines
0 - 50 Feet	No. 14	No. 14
50 - 100 Feet	No. 14	No. 12
Over 100 Feet	No. 12	No. 8

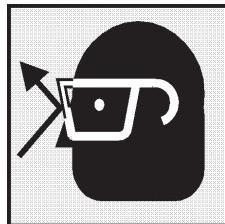
Safety Instructions on Sawing Systems

1. Always wear leather gloves when handling saw blade. The operator shall not wear gloves when operating the machine.
2. All doors shall be closed, all panels replaced, and other safety guards in place prior to the machine being started or operated.
3. Be sure that the blade is not in contact with the workpiece when the motor is started. The motor shall be started and you should allow the saw to come up to full speed before bringing the saw blade into contact with the workpiece.
4. Keep hands away from the blade area. **See Figure A.**
5. Remove any cut off piece carefully while keeping your hands free of the blade area.
6. Saw must be stopped and electrical supply must be cut off before any blade replacement or adjustment of blade support mechanism is done, or before any attempt is made to change the drive belts or before any periodic service or maintenance is performed on the saw.
7. Remove loose items and unnecessary workpieces from area before starting machine.
8. Bring adjustable saw guides and guards as close as possible to the workpiece.
9. Always wear protective eye wear when operating, servicing, or adjusting machinery. Eyewear shall be impact resistant, protective safety glasses with side shields complying with ANSI Z87.1 specifications. Use of eye wear which does not comply with ANSI Z87.1 specifications could result in severe injury from breakage of eye protection. **See Figure B**
10. Nonslip footwear and safety shoes are recommended. **See Figure C.**
11. Wear ear protectors (plugs or muffs) during extended periods of operation. **See Figure D.**
12. The workpiece, or part being sawed, must be securely clamped before the saw blade enters the workpiece.
13. Remove cut off pieces carefully, keeping hands away from saw blade.
14. Saw must be stopped and electrical supply cut off or machine unplugged before reaching into cutting area.
15. Avoid contact with coolant, especially guarding your eyes.

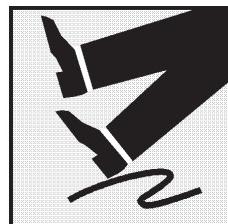
A



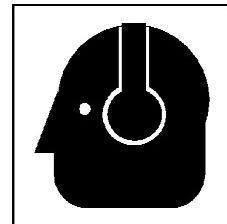
B



C



D



19. Know the tool you are using — its application, limitations, and potential hazards.

Caution: For circuits which are far away from the electrical service box, the wire size must be increased in order to deliver ample voltage to the motor. To minimize power losses and to prevent motor overheating and burnout, the use of wire sizes for branch circuits or electrical extension cords according to the following table is recommended.

Introduction

This manual includes operating and maintenance instructions for the Wilton 14-Inch Tradesman Vertical Band Saws, Models 8201, 8203, 8201VS, and 8203VS. This manual also includes parts listings and illustrations of replaceable parts.

Band Saw Features

Refer to Figures 1 through 3 for key features of the band saw machine. Refer to the Specifications section for additional information on the features and capabilities of the saw.

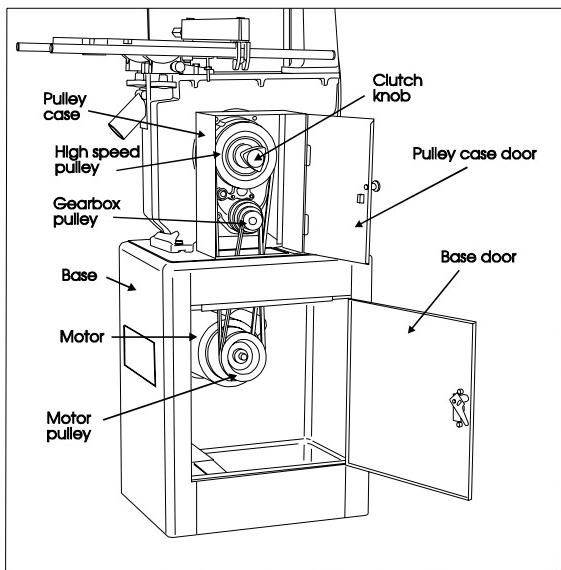


Figure 1: Band Saw Features (Rear View)
(Models 8201/8203)

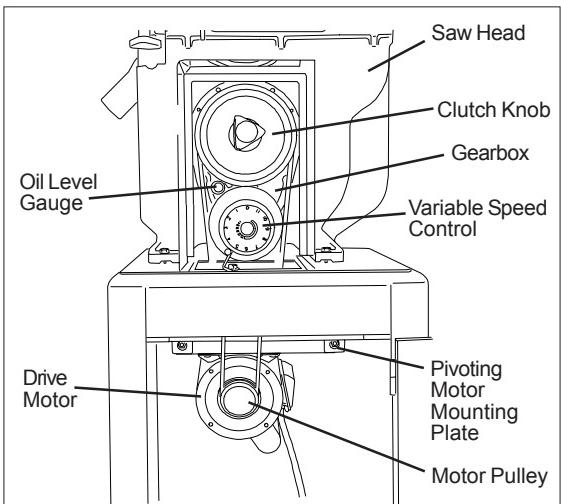


Figure 2: Band Saw Features (Rear View)
(Models 8201VS/8203VS)

Setup and Operation

Set-up

The band saw is shipped with the saw frame separated from the saw base. Set-up of the band saw involves installing the frame and setting-up the saw on the shop floor.

Assembly of Band Saw

The saw is shipped as two separate units — saw frame and base. The saw frame must, therefore, be assembled to the base.

1. Remove loose parts from the saw base and sawframe.
2. Place the base in the location in the shop and bolt the base to the floor. (See following section on spotting saw.) Put shims under the hold-down bolts as required to make sure the saw is level.
3. Place the saw frame on the base. Be sure the pulleys on the saw frame and pulleys in the base are aligned with each other.
4. Install the four bolts, upper washers, lower washers, lock washers and nuts that secure the frame to the base finger tight. Using a straight edge, align the pulleys. Then tighten the four attachment bolt and nuts.
5. Loosen the motor mounting bolts and install the drive belt(s).

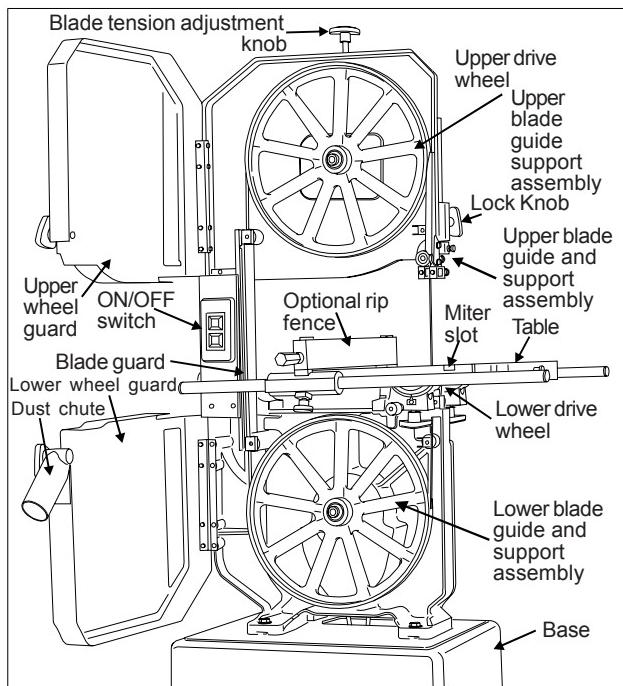


Figure 3: Band Saw Features (Front View)
(All Models)

6. Tension the belts (refer to *Changing Drive Belt Position*).
7. Check gearbox fluid level in sight gauge. If required, add lubricant to bring level halfway up the sight gauge. (Two containers of Shell Spirax 90 HD gear oil are packed with the saw. The containers have sufficient amount of lubricant to fill the gearbox.)
8. Check blade tension and support mechanism adjustment (refer to *Changing Saw Blades*).
9. Plug the motor cable into the switch box on the saw frame. For 3-phase motors, follow the instructions in the Electrical section to complete the electrical hookup.

NOTE: Observe all electrical codes. Local codes or difficult environmental conditions may demand special electrical hook-ups. Always use a licensed electrician for any special electrical hook-up.

Setting-up Saw

The saw should be bolted securely to the shop floor to make sure the saw is stable when sawing long, heavy or unwieldy work pieces. Always use extra support for long or heavy stock.

There are lugs in the bottom of the saw base for use in bolting down of the saw. After positioning the saw, open the door in the base and mark the positions of the four lug holes. Move the saw to expose the marks. Prepare for attachment as required by the attachment method being used. Install the applicable fasteners. Install shims as required to level the saw. Tighten the fasteners to secure the saw to the floor.

8

Electrical

Models 8201 and 8201VS are delivered with a 115 volt single phase motor. Models 8203 and 8203VS are delivered with a 220/440 volt, 3-phase motor.

When the saw is a 115 volt model, it is supplied with a standard 115 volt plug and power cord which can be plugged into any suitable branch circuit.

When the saw is equipped with a 3-phase motor there will be no plug on the 4-wire cable to the saw switch box. Instead, follow these instructions to connect the 3-phase motor to the power source:

Connecting to 3-phase power

- the saw before attempting electrical connections.
2. Connect the green or green-with-white-trace wire to the branch circuit ground wire.
3. Connect the remaining three wires to the power wires in the 3-phase branch circuit.
4. Reestablish power in the electrical branch.
5. Turn on power to the saw motor using the switch.
6. Observe the direction of the blade. It should be going DOWNWARD, into the slot on the table. If it is not going downward, the power wires are hooked-up incorrectly.
7. To correct hook-up, disconnect and lock out power to the branch, again. Reverse any two of the power wires on the hook-up to the saw cable.
8. Reestablish power in the branch and turn the saw on again. The blade should now be going downward into the table slot.

Note: local electrical codes or other codes may require direct connection to a covered, protected junction box, or other electrical hook-up method. Especially under difficult industrial conditions, specialized electrical connections may be necessary. For special electrical hook-ups, a licensed electrician should be used to connect the saw to power.

CAUTION: KNOW AND OBSERVE ALL LOCAL AND OTHER APPROPRIATE ELECTRICAL CODES WHEN ATTACHING THIS BAND SAW TO YOUR POWER SUPPLY.

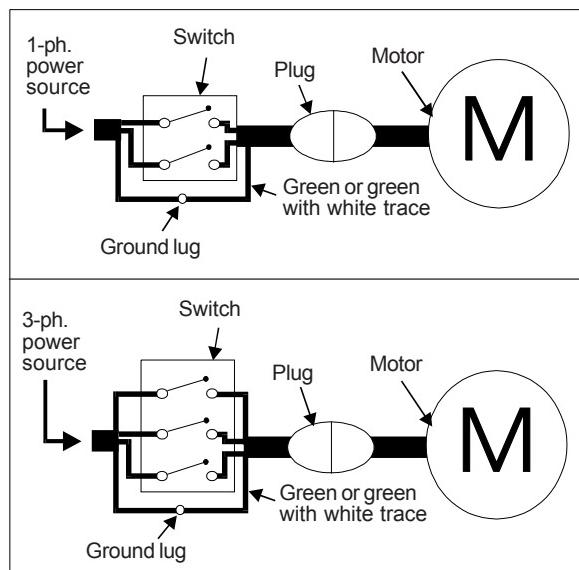


Figure 4: Wiring Diagrams

1. Disconnect and lock out the branch circuit to

Installing Optional Frame Riser

NOTE: Refer to the illustrations in the Replacement Parts section for location of the parts used on the frame riser.

1. Remove the saw blade (refer to *Changing Saw Blades*).
2. Remove the two screws at the top and bottom of the blade guide that holds the blade guide on the frame.

WARNING: The saw must be turned off and power disconnected any time the rubber protectors are being changed.

3. Unplug the electrical cord or open the circuit breaker in the branch circuit.
4. Support the upper frame and wheel assembly with a strap attached to an overhead crane. Use additional straps to be sure the frame assembly will be held in a stable position when it is lifted off the lower frame assembly.
5. Remove the nut on the bolt that clamps the upper frame to the lower frame and remove the bolt, two washers and nut.
6. Lift the upper frame high enough off of the lower frame to clear the riser casting.
7. Be certain the mating surfaces of the lower frame, riser, and upper frame are all clean and free from dirt and debris.
8. Position the riser casting over the lower frame. Make sure the locating dowels are inserted in the mating holes in the riser casting.
9. Lower the upper frame onto the riser casting. Make sure the locating dowels fit into their mating holes.
10. Put the new (longer) attaching bolt and top washer through the upper frame and riser, into the lower frame.
11. Put a washer and nut on the bolt and tighten securely.
12. Attach the bracket hooks to the top and bottom of the blade guard using self-tapping screws.
13. Attach the blade guide using the screws that held the original (shorter) guard.
14. Remove the old (shorter) blade guide post assembly from the upper frame.
15. The guide support assembly with the carbide guides and blade support bearings should be transferred to the new, longer support rod. Several other new parts are included for this component. (Refer to the parts illustrations for more detail.)
16. Install a new 105-inch blade (refer to *Changing a Blade*). Make sure blade tension and tracking

are checked and adjusted as required.

18. Install the extension plug cable between the motor plug and switch plug.
19. Plug the electrical cord into the power source or close the circuit breaker on the branch circuit. Operate the band saw to verify blade tracking.

Installing Optional Rip Fence

The rip fence slides on two rails attached at the front and rear of the work table. Install the fence mechanism as follows:

NOTE: Refer to the illustrations in the Replacement Parts section for location of the parts used on the rip fence.

1. Slide the rails into the fence.
2. Ease the fence and rails into position on the table.
3. Using the four spacers and four attachment bolts, attach the rails securely to the saw table.
4. The fence can now be adjusted and used according the instructions in Adjustment and Use of Optional Rip Fence.

Operating Instructions

Operating Controls

START/STOP Switch

The START/STOP switch (refer to Figure 5) is used to turn on the band saw drive motor. The START switch has a molded guard which prevent inadvertent pressing of the START pushbutton.

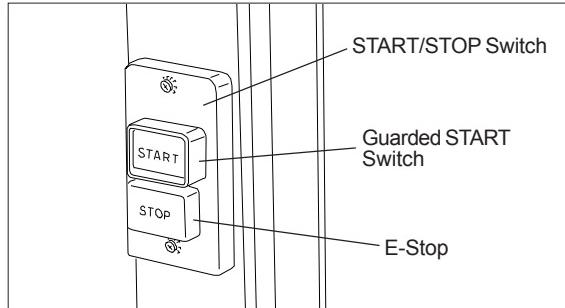


Figure 5. START/STOP Controls

The STOP pushbutton is not guarded to allow use as an E-stop in an emergency.

Variable Speed Control

The variable speed control (refer to Figure 9) is used to change the speed of the saw blade. Refer to **Adjusting Blade Speed** for additional information on the use of the variable speed control.

Figure 6 provides suggested blade speeds for various types of materials. The recommended speeds should be decreased 30 to 50% when using carbon steel blades. (The chart provides speeds that are based on cutting a 4-inch thick work piece using a bi-metal blade without cutting fluid.)

The following conditions should also be considered:

1. Increase speed 15% for materials 1/4-inch thick, 12% for 3/4-inch thick, 10% for 1 1/4-inch thick, and 5% for 2 1/2-inch thick.
2. Decrease speed 12% when cutting 8-inch thick material.

To avoid tooth breakage, select a blade-tooth pitch that will have two or more teeth in contact with the workpiece at all times.

Different blade materials and tooth geometry (pitch and set) permit sawing a wide range of common and exotic materials. Contact your industrial distributor for recommendations on specialized blades. Using the correct blade can save you time, trouble, and the possibility of dulling and premature discarding of the blade you normally might use. NOTE: Always use a sharp blade. SHARP BLADES ARE CHEAP INSURANCE AGAINST POOR CUTTING EFFICIENCY AND ACCELERATED MACHINE WEAR.

Material being cut	Speed (SF/M) range
Structural steel shapes	165
Low carbon steel	160-165
Medium carbon steel	115
High carbon steel	90-100
Cr-moly steel	105-135
Ni-Cr-moly steel	90-115
Chromium steel	80-140
Cr-vanadium steel	105-115
Tool steel	40-80
Stainless steel	40-70
Free machining steel	80-100
Cast iron	55-90
Copper alloy (CU-Zm)	55
Bronze	90
Al-bronze	40
Monel	40-45
Titanium alloy	25-40
Aluminum (soft)	3000
Aluminum (T-6+)	3000
Carbon	3000
Slate	80-160
PTFE sheet, rod, rounds	3000
Hard rubber	3000
Plywood	3000
Other woods	3000

Figure 6. Blade Speed to Material Chart

Operating Instructions Saw blades

The Wilton 14-inch saws accept blades from 1/8-inch wide to 3/4-inch wide. The narrower widths are used for cutting shapes or circles; the wider widths are used for straight cuts.

For straight cuts, use the widest available saw blade. A wide blade provides cutting stability, and allows for more accurate and straighter cuts. Blade speed effects the efficiency of the cut and the service life of the blade. Good shop practice requires that work-hardening materials, such as stainless steel, require the cut be completed in a single pass. Otherwise, the effect of stopping the cut can result in hardening of the cut interface.

Other materials such as wood require higher blade speeds to prevent fiber tearing. The chart in

Adjustments

Adjusting Blade Support/Guide Height

The upper blade support and guide mechanism can be adjusted to accommodate the height of the work piece.

1. To adjust the support, loosen the knob that clamps the support rod, then move the support up or down in its holder. (Refer to Figure location of the support mechanism.)
2. Adjust the support so there is space between the support and work piece. Space of approximately 1/8-inch is generally appropriate.

Adjusting Blade Tension

Blade tension is set by a spring loaded tension mechanism on the upper drive wheel. Check the level of the tension device before cutting. The tension for various blade widths as indicated on the casting on the tension device.

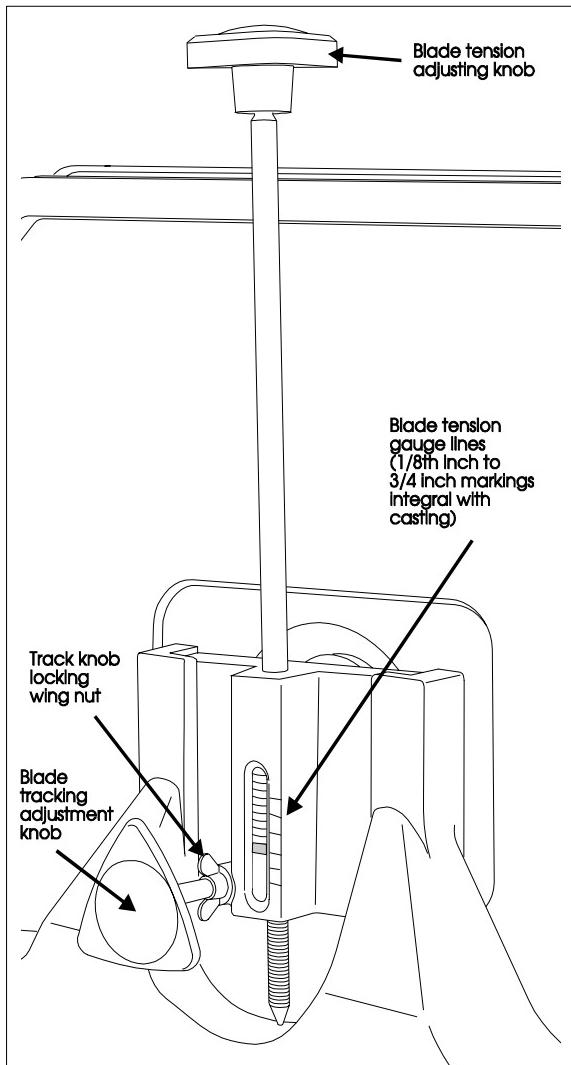


Figure 7. Saw Blade Tension and Tracking Mechanism

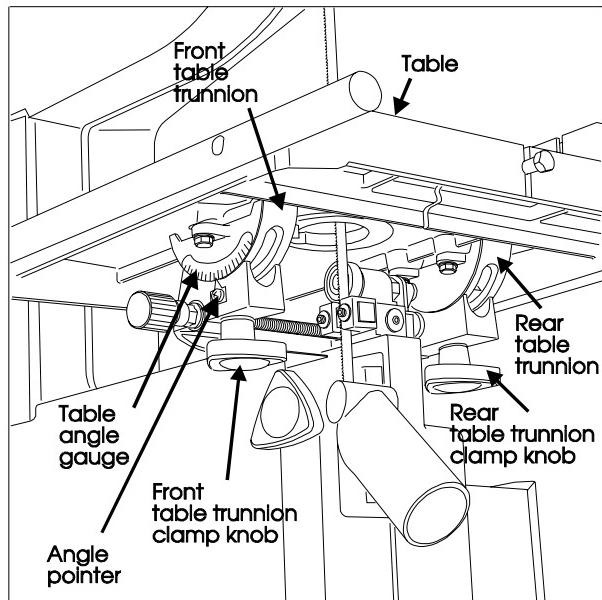


Figure 8. Table Tilt Mechanism and Angle Gauge

Adjusting Table Angle

(Refer to Figure 8.) The angle gauge is under the front of the table. The angle gauge shows the angle of the table relative to the saw blade. The table is mounted on trunnions that allow adjustment downward 45 degrees, and upward 10 degrees. Loosen the two trunnion lock knobs slightly to adjust the table angle and retighten the lock knobs.

NOTE: by adjusting the positive leveling stop on the table leveling mechanism, it is possible to tilt the table upward 10 degrees. When returning to 0 degrees, the table leveling mechanism must be reset after completing the sawing operation (refer to *Machine Set-up*).

WARNING: When cutting at an angle with a tilted table, provide a guide against which the material being cut can rest. Cutting "freehand" at an angle, can result in injury and maintaining an accurate cut is difficult.

Leveling Work Table

The table can be adjusted to level the table relative to the saw blade. Use the following method:

WARNING: The saw must be turned off and power disconnected any time the gearbox lubricant is being drained or filled.

1. Unplug the electrical cord or open the circuit

- breaker in the branch circuit.
2. Move the upper blade guide assembly to the very top of its travel.
 3. Make sure the blade is straight, and fully tensioned. (A damaged or worn blade may provide a poor reference surface for squaring the table.)
 4. Loosen the table lock knobs and hold the table firmly against its positive leveling stop.
 6. Using a machinist's square, check to make sure the table is 90 degrees to the blade. **USING LEATHER PROTECTIVE GLOVES**, turn the upper drive wheel to check the squareness at a minimum of three points on the blade
 7. If the table is not level, unlock the lock nut on the table leveling bolt.
 8. Turn the leveling bolt as required to make the table square to the blade.
 9. Lock the leveling bolt lock nut and recheck the table level. When the table is level...
 10. Lock the table lock knobs securely and recheck for level. Adjust as necessary until the table is level while everything is tightened to working tightness.
 11. With everything locked down, look at the pointer for the angle gauge. It should be exactly on the zero mark of the gauge (*Figure 12*). If not, loosen the pointer screw, adjust the pointer until it is on zero, then tighten the pointer screw while holding the pointer securely in position on zero.

Adjusting Miter Gauge Slot Parallelism

The miter slot should be parallel to the side of the blade. If the saw is not cutting straight when using the miter gauge, the miter slot may not be parallel.

1. Put a straight edge against the blade. Make sure to position the blade so tooth offset does not affect the straight edge.

2. Measure from both ends of the miter slot to the straight edge.
3. If the measurements are not equal at both ends of the slot, loosen six bolts securing the table to the table trunnions (see *Figures 12 and 13*.)
4. Adjust the table until it is parallel with the blade.
5. Tighten the trunnion attaching bolts.

Adjusting Blade Speed (Models 8201/8203)

Figure 6 on page 9 provides blade speeds for various materials. To adjust the blade speed, change the clutch position of the clutch (in or out) and the position of the drive belt on the pulleys on the motor and reduction gearbox shafts.

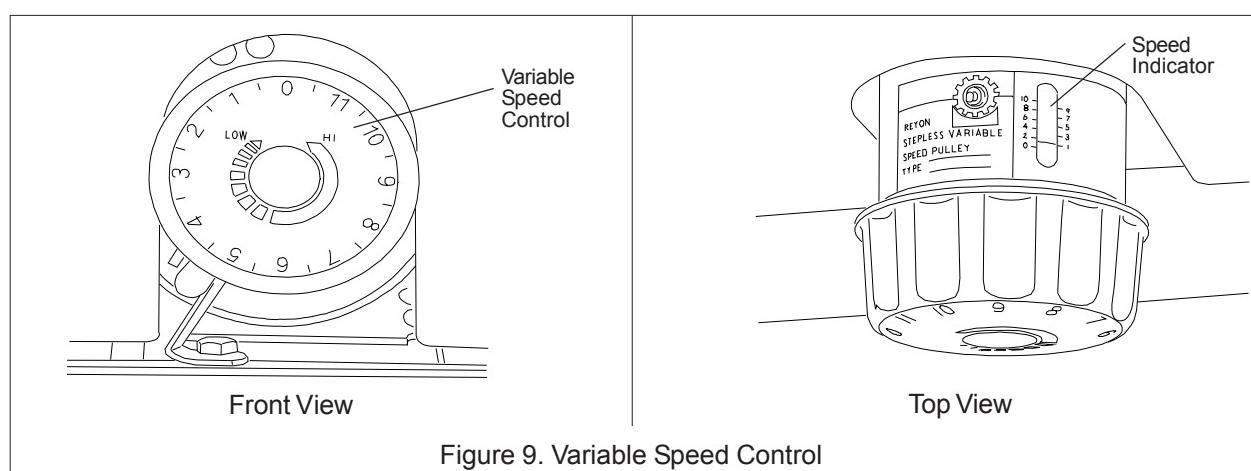
Adjusting Blade Speed (Models 8201VS/8203VS)

See *Figure 9* at bottom of this page.

1. The blade speed is controlled by an adjustment mechanism on the right end of the saw. Speed increases or decreases as the knob is turned
2. A placard on the drive belt guard (shown below) provides recommended speeds for various materials.
3. A speed indicator is provided on the barrel of the adjustment mechanism. In surface feet per minute; Position 0 = 334, 1 = 262, 2 = 216, 3 = 171, 4 = 137, and 5 = 116.
4. Turn the speed adjustment knob to the desired setting as determined by the material being cut.

Changing Clutch Position

WARNING: NEVER attempt to shift the clutch mechanism while the saw is running. The saw must be turned off before clutch shifted.



1. Turn the main switch to off.
2. Pull the door open on the pulley case.
3. Turn the clutch handle clockwise and push in, to engage the high speed pulley drive. Or, turn the clutch handle clockwise, and pull out, to engage the reduction gearbox drive.
5. Release the weight of motor so the motor pivots downward. The weight of the motor is provide adequate belt tension.
6. Plug the electrical cord into the power source or close the circuit breaker on the branch circuit.

NOTE: When pushing or pulling the clutch knob, the dogs on the clutch mechanism are being engaged. Take the time make sure the clutch handle is all the way in, or all the way out, so the clutch dogs are in full engagement when the saw is started.

4. Close the pulley case door.
5. Plug the electrical cord into the power source or close the circuit breaker on the branch circuit.

Changing Drive Belt Position

WARNING: The saw must be turned off and power disconnected before changing drive belt positions.

Refer to Figure 9, below.

1. Unplug the electrical cord or open the circuit breaker in the branch circuit.
2. Open the door on the machine base and the door on the pulley case.
3. Push up on the motor to pivot the motor upward and slacken the drive belt.
4. Move the drive belt to the desired pulley position.

NOTE: Never force the belts to change pulley location without pivoting the motor to loosen the motor belt. Failure to do so can cause damage to the drive mechanism, and accelerate belt wear and possibly result in belt failure.

5. Release the weight of motor so the motor pivots downward. The weight of the motor is provide adequate belt tension.
6. Plug the electrical cord into the power source or close the circuit breaker on the branch circuit.

Changing Pulley-to-Belt Position

WARNING: NEVER attempt to change pulley shaft positions while the saw is running. The saw must be turned off and power disconnected any time pulley shaft positions are being changed.

1. Unplug the electrical cord or open the circuit breaker in the branch circuit.
2. Open the door on the machine base and the door on the pulley case.
3. Push up on the motor to pivot the motor upward and slacken the drive belt.
4. With the motor drive belt loose, remove both pulley drive belts.
5. Both of the pulleys are secured to their shafts with two set screws. These are located in the bottoms of the V-grooves on the pulleys. Using a hex wrench, loosen (but do not remove) all four set screws.
6. Pull the pulleys straight off each shaft.
7. Put the lower pulley on the upper shaft and the upper pulley on the lower shaft.
8. Push the upper pulley firmly against the reduction gearbox and tighten the two set screws which secure it to the shaft.
9. Using a straight edge against the pulley flanges, make certain the bottom pulley is aligned with the upper pulley. Then tighten the two set screws that secure the lower pulley to the shaft.

13

Clutch position - In or Out										
Belt position and Pulley position - large or small OD pulleys on top or bottom shaft										
Blade speed SFM	3000	142	196	278	107	3300	39	78	57	107

Figure 10. Clutch to Pulley Speed Settings

10. Install the belts as required (refer to Figure 10).
11. Release the weight of motor so the motor pivots downward. The weight of the motor will provide adequate belt tension.
12. The weight of the motor should provide sufficient tension so the the middle of the small drive belt is displaced approximately the thickness of the belt. (The high speed belt is adjusted at the same time as the smaller belt.)
13. Set the drive clutch to the desired position (IN or OUT).
14. Close the access doors.
15. Plug the electrical cord into the power source or close the circuit breaker on the branch circuit.

Using Miter System

A miter gauge is provided with the band saw. The miter gauge slips into a slot in the face of the work table. The miter gauge can be adjusted from 0 to 45 degrees.

Adjust the miter gauge as follows:

1. Loosen the clamping screw on the miter gauge.
2. Adjust to desired angle.
3. Tighten the clamping screw.

Using Rip Fence

1. Unlock the fence by loosening the lock knob (ref. 7) and handle (ref. 10.)
2. Slide the fence on its guides until it is the required distance from the blade.
3. Tighten the lock knob and handle, slightly.
4. Using a machinist's square, measure the distance between the edge of the miter slot and both the front and rear of the rip fence. Adjust so both distances are equal.
5. Check the fence-to-blade gap, again. Readjust the fence, if necessary, until the blade gap is correct and the fence is parallel with the miter slot.
6. Tighten the fence firmly using the lock knob and handle.

Using the Dust Control Chute

On the lower side of the table, below the cutting position of the blade, is a plastic tube which can be attached to a shop vacuum, or to a shop dust control system. The dust control chute can be seen in several of the figures used to illustrate the operation of the saw.

Maintenance

This section contains periodic maintenance recommendations and maintenance procedures.

Changing Saw Blade

WARNING: The saw must be turned off and power disconnected any time saw blades are being changed.

1. Unplug the electrical cord or open the circuit breaker in the branch circuit.
2. Pull open both upper and lower drive wheel guards (refer to Figure 1).
3. Release blade tension completely by turning the tension handle fully counterclockwise.
4. Remove table leveling pin. The pin has a tight push fit in its slot; it is not threaded. (Refer to Figure 13.)
5. Use a screwdriver to pop out the table insert.
6. Loosen the set screws that lock the guide blocks. Move the guide blocks outward. Then turn the micro-adjusting knob to move the blade support bearing to the very rear of its travel.
7. Using a hex wrench, loosen the set screw that locks the lower blade guide and support assembly. Move the assembly to the very rear of its travel by using the micro-adjusting knob on the back side of the assembly (refer to Figure 11).

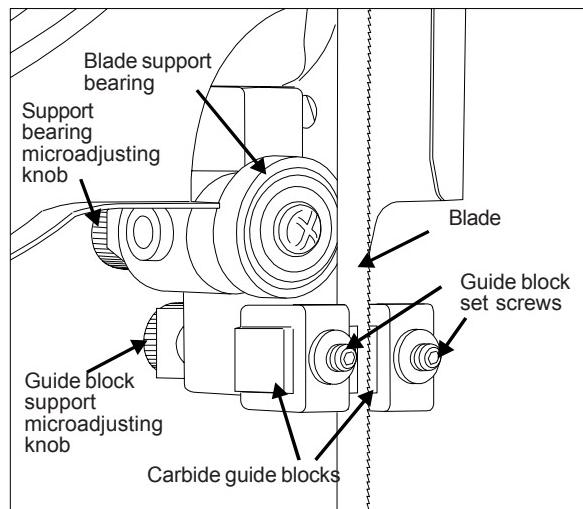


Figure 11. Upper Blade Guides

8. Using a hex wrench, loosen the carbide blade guide set screws. Open up a reasonably large gap between the guides; do this on both the upper and lower blade guides.

9. USING LEATHER GLOVES AND ANSI Z87.1 EYEWEAR TO PROTECT YOURSELF FROM THE CUTTING BLADE, carefully remove the blade from the drive wheels. Remove the blade out of the saw table through the table.
10. Hang the removed blade in a safe place.

NOTE: Clean out the interior of the saw with a shop vacuum. Examine the bearings and other exposed mechanisms of the saw.

11. Using protective gloves, carefully ease the replacement blade into the table slot and over the upper and lower drive wheels.

NOTE: It is possible to install the blade upside down. Make sure the teeth on the blade are pointing downward.

NOTE: The blade should be "free standing" at the cutting throat; the upper and lower blade guides should not touch the blade at any point. Also, make sure the blade is in the slot in the blade guard on the left side of the machine frame. Refer to Figure 1 to identify the blade guard.

12. Apply tension to the blade using the tension knob. The tension levels for various blade widths are shown on the markings on the tension device. Refer to Figure 3 for a view of the tension system.
13. Slowly turn the upper drive wheel by hand, while OBSERVING THE BLADE TRACKING. The blade should track, more or less, in the center of the drive wheel. If the blade does not track true, adjust the tracking to keep the blade centered.
14. Unlock the tilt adjustment knob by loosening its locking wing nut. Both the adjustment knob and wing nut are identified in *Figure 7*.
15. Turn the tilt adjustment knob (usually a VERY LITTLE at a time) to adjust the tilt of the upper drive wheel. Do this while turning the upper wheel by hand, and adjusting until the blade stays centered on the wheel.
16. Tighten the tilt mechanism locking wing nut.
17. Using the micro-adjusting knob, move the lower blade support assembly (*Refer to Figure 12*) forward until the support bearing just contacts the back edge of the saw blade.
18. Adjust the lower carbide blade guides until they just contact the sides of the blade. Make sure the guides DO NOT CONTACT THE TOOTH PORTION OF THE BLADE. The guides should touch only the flat part of the blade. After correctly positioning the carbide guide blocks, tighten the set screws securely.

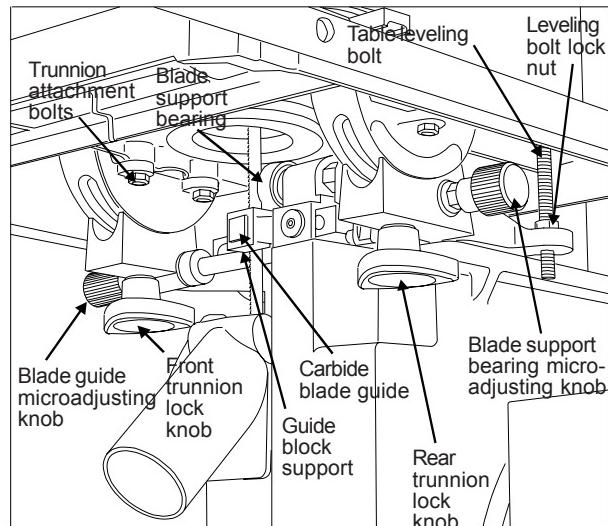


Figure 12. Lower Blade Guide Support
Rear View

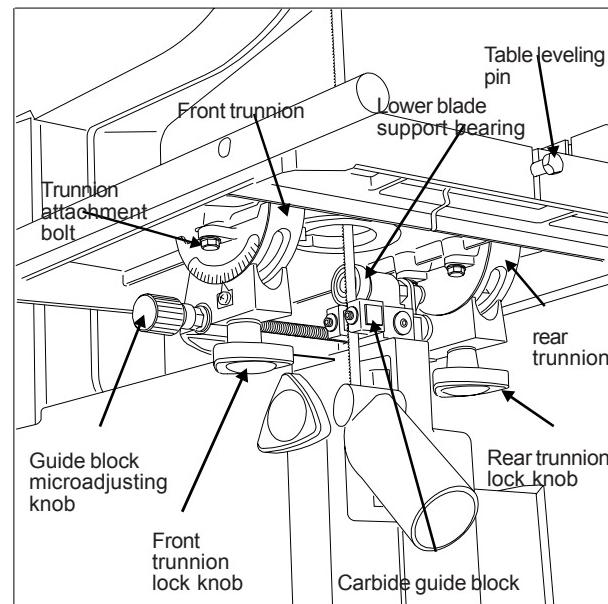


Figure 13. Lower Blade Guide Supports
Front View

19. Adjust the upper support assembly so the support bearing just contacts the back edge of the saw blade.
20. Adjust the upper carbide blade guides until they just make contact with the blade BEHIND THE TOOTH AREA OF THE BLADE. Then tighten the set screws securely.
21. Replace the table insert.
22. Insert the table pin into its slot.
23. Close the drive wheel guards.
24. Plug the electrical cord into power source or close the circuit breaker on the branch circuit.
25. Turn on the power and observe the action of the blade to sure the blade is correctly adjusted.

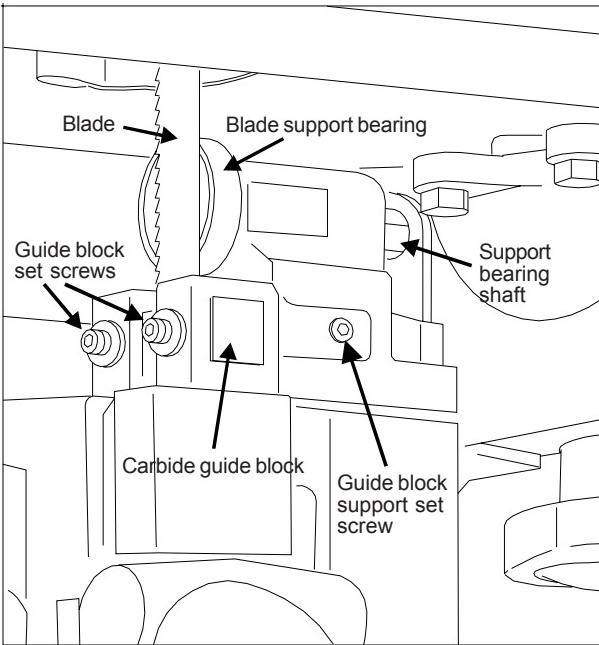


Figure 14. Lower Blade Support Assembly

Replacing drive wheel rubber protectors

The rubber rings that cover the drive wheels are called protectors. The protectors protect the wheel from blade damage and provide a high friction drive force on the tensioned blade. Over a long period of service, the protectors wear and may require replacement.

WARNING: The saw must be turned off and power disconnected any time the rubber protectors are being changed.

1. Unplug the electrical cord or open the circuit breaker in the branch circuit.
2. Remove the blade according to the step-by-step instructions on blade replacement.
3. Remove the rubber protectors from the drive wheels. Use a flat screwdriver blade or knife blade to loosen the protectors, being careful not to nick or score the aluminum drive wheels.
4. Clean the surface of the drive wheels. Use a solvent such as mineral spirits as required to achieve a clean, dry surface for the new protectors.
5. Carefully slip the replacement protectors onto the drive wheels.
6. Replace the saw blade and return the saw to service by following the steps in *Changing Saw Blades*.
7. Plug the electrical cord into the power source or close the circuit breaker on the branch circuit.

Draining and refilling the reduction gearbox.

WARNING: The saw must be turned off and power disconnected any time the gearbox lubricant is being drained or filled.

1. Unplug the electrical cord or open the circuit breaker in the branch circuit.
2. Open the door in the base.
3. Push up on the motor to loosen the drive belts.
4. Remove the pipe plug at the bottom of the gearbox. Drain the oil into a suitable container for safe and appropriate disposal.
5. Replace the drain plug.
6. Open the filler plug.
7. Add lubricant until the level is halfway up the sight gauge window (refer to Figure 15). Use Shell Spirax HD 90 gear lubricant.
8. Replace the filler plug.
9. Replace the drive belts. Allow the motor to pivot downward to apply tension to the belts.
10. Close the access door.
11. Plug the electrical cord into the power source or close the circuit breaker on the branch circuit.

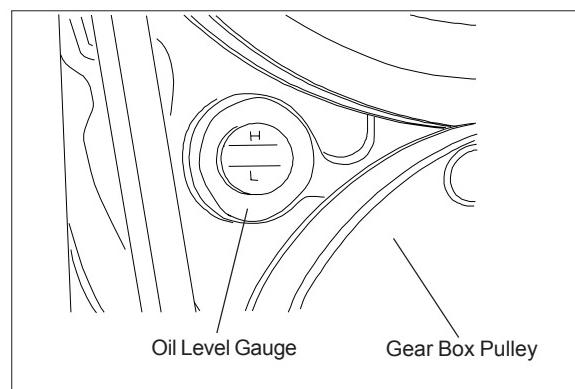


Figure 15. Gearbox Oil Level Gauge

Periodic Maintenance

Refer to the Periodic Maintenance chart for maintenance that should be performed at various time intervals.

Troubleshooting

Refer to the Troubleshooting charts for equipment fault, probable cause and suggested remedy.

Periodic Maintenance

Item	Action	Interval	Maintenance
Saw blade	Listen for sound of missing teeth	Whenever operating saw	Replace blade when teeth are broken
	Observe cutting action for cleanliness and accuracy	Whenever operating saw	Replace blade when bent — or worn — Use a wider blade for more accurate straight cuts
	Listen for a poor weld — a “click” as it passes through the guide blocks	When changing blade	Use a different blade or dress the weld with a grinder.
	Watch for signs of slippage on the drive wheels (blade occasionally slows or comes to a stop while sawing)	Whenever sawing	Be sure you are using the correct blade tension — Check drive wheel rubber strips for cleanliness and adherence to drive wheel — replace if necessary
Lower drive wheel	Check bearing area for leakage of lubricant	Monthly	Replace bearing if leakage occurs
Upper drive wheel	Check bearing area for leakage of lubricant	Monthly	Replace bearing if leakage occurs
Drive wheel rubber protectors	Check for cleanliness	Daily and when changing blade	Wipe or brush clean
Drive belts	Check for smooth surfaces and adherence to drive wheel surface	Monthly or when blade slippage occurs	Clean when necessary — replace if damaged or excessively worn
	Check for glazing	Monthly, or when slippage occurs (squealing belt)	Replace a glazed belt — DO NOT USE BELT DRESSING
Reduction gearbox	Check sight glass for level — should be to halfway point on sight glass	Daily	Fill up to half-way point on sight glass with Shell Spirax HD 90
		Annually	Drain and refill with Shell Spirax HD 90
Blade support bearings	Check for wear, damage or lubricant leakage	Monthly and when changing blade	Replace when necessary
Carbide blade guides	Check for excessive wear	When changing blade	Replace if excessively worn

Troubleshooting

Fault	Probable cause	Suggested remedy
Excessive blade breakage	<ol style="list-style-type: none"> 1. Material loose in vise. 2. Incorrect speed or feed. 3. Teeth too coarse for material. 4. Incorrect blade tension. 5. Saw blade contacts workpiece before the saw is started. 6. Blade rubs on the wheel flange. 7. Misaligned guides. 8. Cracking at weld. 	<ol style="list-style-type: none"> 1. Clamp work securely. 2. Refer to Figure 6 or check Machinist's Handbook for speed/feed appropriate for the material being cut. 3. Check Machinist's Handbook for recommended blade type. 4. Adjust blade tension to the point where the blade just does not slip on the wheel. 5. Start the motor before placing the saw on the workpiece. 6. Adjust blade tracking. 7. Adjust guides. 8. Longer annealing cycle.
Premature blade dulling	<ol style="list-style-type: none"> 1. Blade teeth too coarse. 2. Blade speed too high. 3. Hard spots in workpiece or scale on/in workpiece. 4. Work hardening of material (especially stainless steel). 5. Insufficient blade tension. 6. Operating saw without pressure on workpiece. 	<ol style="list-style-type: none"> 1. Use a finer tooth blade. 2. Try a lower blade speed. 3. Increase feed pressure (hard spots). Reduce speed, increase feed pressure (scale). 4. Increase feed pressure by reducing spring tension. 5. Increase tension to proper level. 6. Do not run blade at idle in/on material.
Bad cuts (out-of-square)	<ol style="list-style-type: none"> 1. Feed pressure too fast. 2. Guide bearings not adjusted properly. 3. Inadequate blade tension. 4. Dull blade. 5. Incorrect blade speed. 6. Blade guide assembly is loose. 7. Blade guide bearing assembly loose. 8. Blade track too far away from wheel flanges. 9. Guide bearing worn. 	<ol style="list-style-type: none"> 1. Decrease pressure. 2. Adjust guide bearing clearance to 0.001 inch (0.002 inch maximum). 3. Gradually increase blade tension. 4. Replace blade. 5. Check blade speed (see Figure 6). 6. Tighten blade guide assembly. 7. Tighten blade guide bearing assembly. 8. Adjust blade tracking. 9. Replace worn bearing.
Bad cuts (rough)	<ol style="list-style-type: none"> 1. Blade speed too high for feed pressure. 2. Blade is too coarse. 	<ol style="list-style-type: none"> 1. Reduce blade speed and feed pressure. 2. Replace with finer blade.

Troubleshooting

(Continued)

Blade is twisting	1. Blade is binding in the cut. 2. Blade tension too high.	1. Decrease feed pressure. 2. Decrease tension on blade
Unusual wear on side/back of blade	1. Blade guides worn 2. Blade guide bearings not adjusted. 3. Blade guide bearing bracket is loose.	1. Replace blade guides. 2. Adjust blade guide bearings. 3. Tighten blade guide bearing bracket.
Teeth missing/ripped from blade	1. Blade tooth pitch too coarse for workpiece. 2. Feed too slow; feed too fast. 3. Workpiece vibrating. 4. Gullets loading up with chips.	1. Use blade with finer tooth pitch. 2. Increase feed pressure and/or blade speed. 3. Clamp workpiece securely. 4a. Use blade with a coarse tooth pitch—reduce feed pressure. 4b. Brush blade to remove chips.
Motor running too hot	1. Blade tension too high. 2. Drive belt tension too high. 3. Blade too coarse for workpiece 4. Blade too fine for workpiece 5. Speed reducer requires lubrication.	1. Reduce tension on blade. 2. Reduce tension on drive belt. 3. Use blade with fine tooth pitch. 4. Use blade with coarse tooth pitch. 5. Check speed reducer.
Excessive speed reducer noise/vibration	1. V-belt is too tight.	1. Reset V-belt tension.

19

Replacement Parts

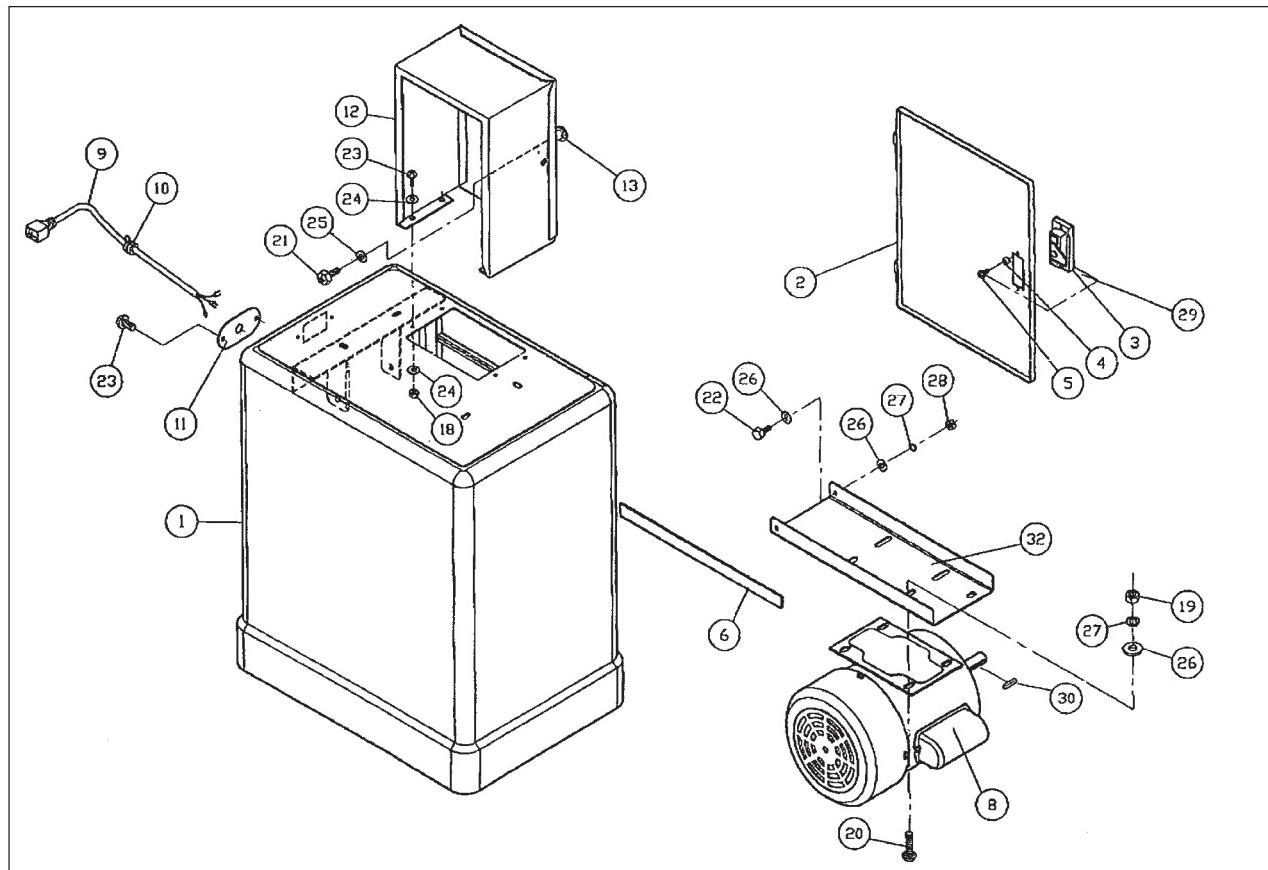
This section provides exploded view illustrations that show the replacement parts for the Wilton Model 8201, 8203, 8201VS, and 8203VS Vertical Band Saws. Also provided are parts listings that provide part number and description. The numbers shown on the illustration relate to the item number in the facing parts listing.

Order replacement parts from:

WMH Tool Group
2420 Vantage Drive
Elgin, IL 60123
Phone: 847-274-6848

Identify the replacement part by the part number shown in the parts listing. Be sure to include the model number and serial number of your machine when ordering replacement parts to assure that you will receive the correct part.

Exploded View and Parts Listing – Base – Models 8201, 8203, 8201VS and 8203VS



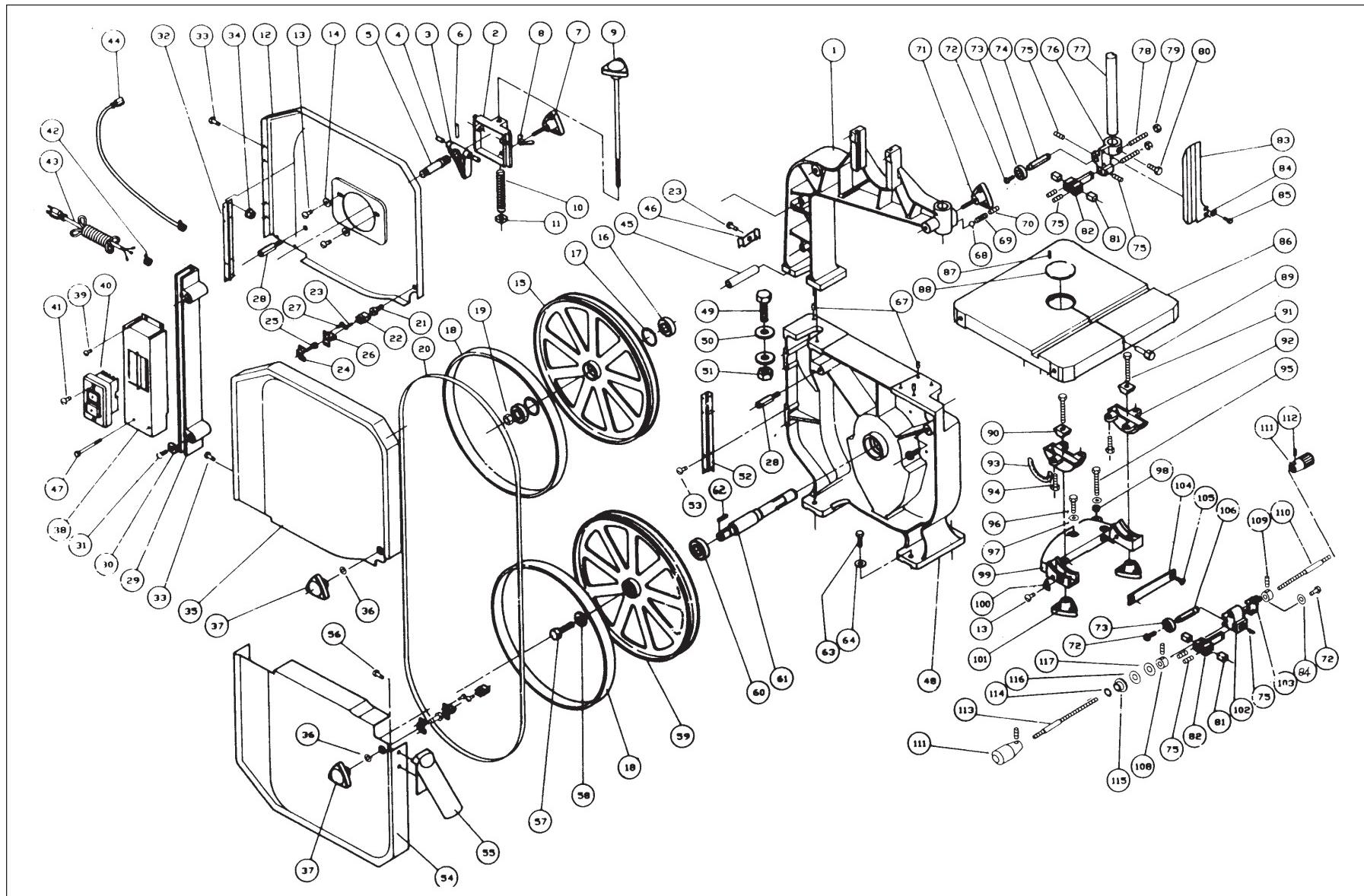
20

Ref No.	Part. Number	Description	Qty	Ref No.	Part. Number	Description	Qty
1	5513834	Base	1	18	5513847	Nut (M5)	4
2	5513835	Door	1	19	5513848	Nut (M8)	8
3	5513836	Lock (Ref. Note 1)	1	20	5513849	Bolt, Carriage (M8x16)	4
4	5513837	Washer (Ref. Note 1)	1	21	5784331	Bolt, Hex Head (M6x12)	1
5	5513838	Bolt, Pan Head (M4x5) (Ref. Note 1)	2	22	5513851	Bolt, Hex Head (M8x25)	4
6	5513839	Pad	2	23	5782761	Bolt, Pan Head (M5x12)	6
8	5784391	Motor - 115V 1-ph	1	24	5513853	Washer, Flat (M5x• 10)	8
	5784411	Motor - 220/460V 3-ph		25	5513854	Washer, Flat (M6x• 16)	1
9	5784421	Cord, Motor - 1-ph	1	26	5513855	Washer, Flat (M8x• 18)	12
	5784431	Cord, Motor - 3-ph		27	5513856	Washer, Spring (M8)	8
10	5513842	Strain Relief	2	28	5513857	Nut, Nylon (M8)	2
11	5784281	Plate, Strain Relief	1	29	5513858	Lock Assembly	1
12	5513844	Case, Pulley	1	30	5513859	Key	1
	5513845	Cover, Pulley Case (Not Shown)		31	5513860	Stand, Close (Not Shown)	1
13	5513846	Knob	1	32	5513861	Bracket, Motor	1
				33*	5507565	Base Assembly without motor	1

Note 1: Noted parts are part of lock assembly, number 29

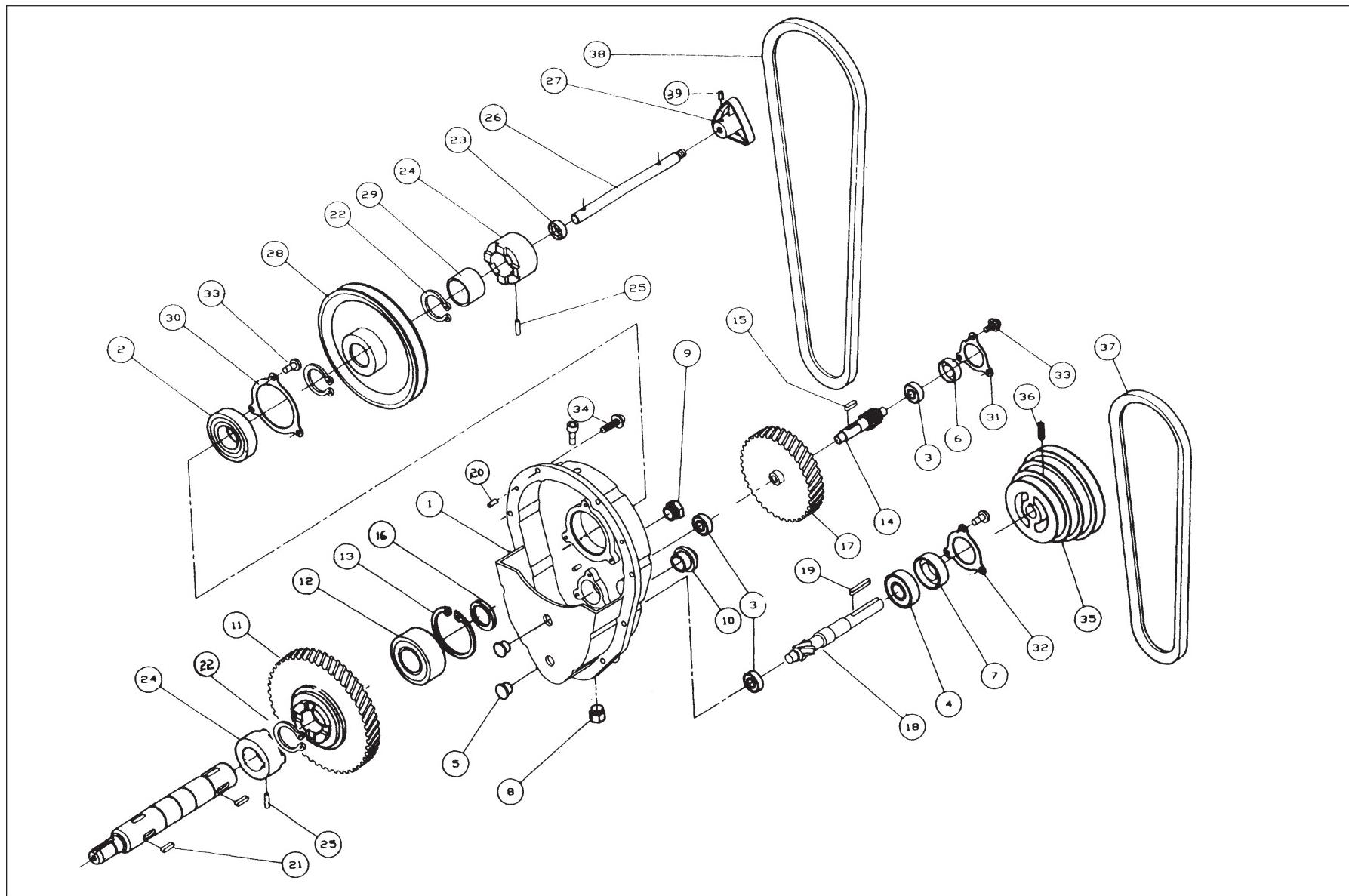
* Ref No. 33 includes all components shown in the Exploded View except the motor (Ref No. 8).

Exploded View – Saw Head – Models 8201, 8203, 8201VS, and 8203VS



Parts Listing – Saw Head – Models 8201, 8203, 8201VS, and 8203VS

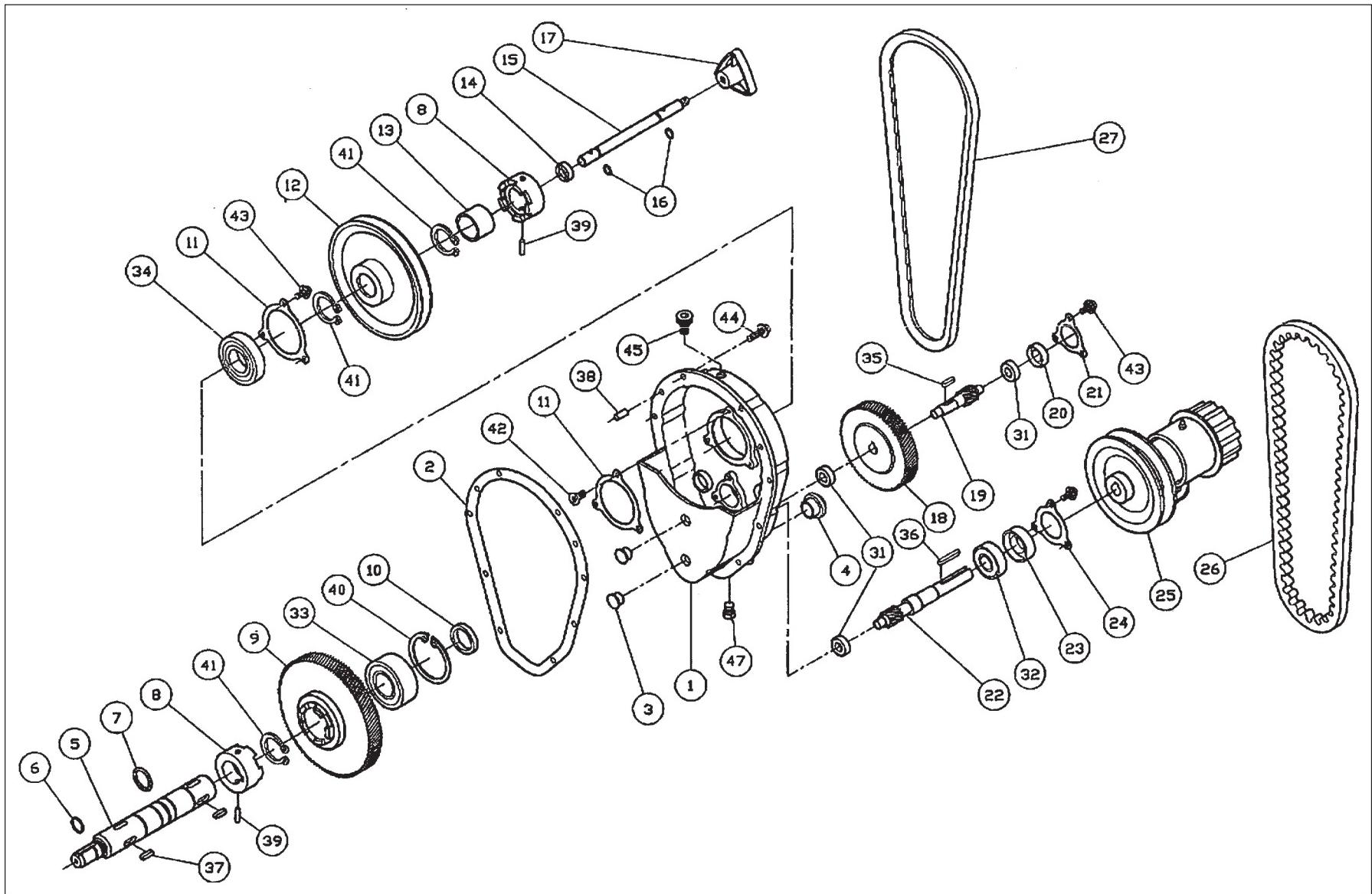
Exploded View – Gearbox – Models 8201 and 8203



Parts Listing – Gearbox – Models 8201 and 8203

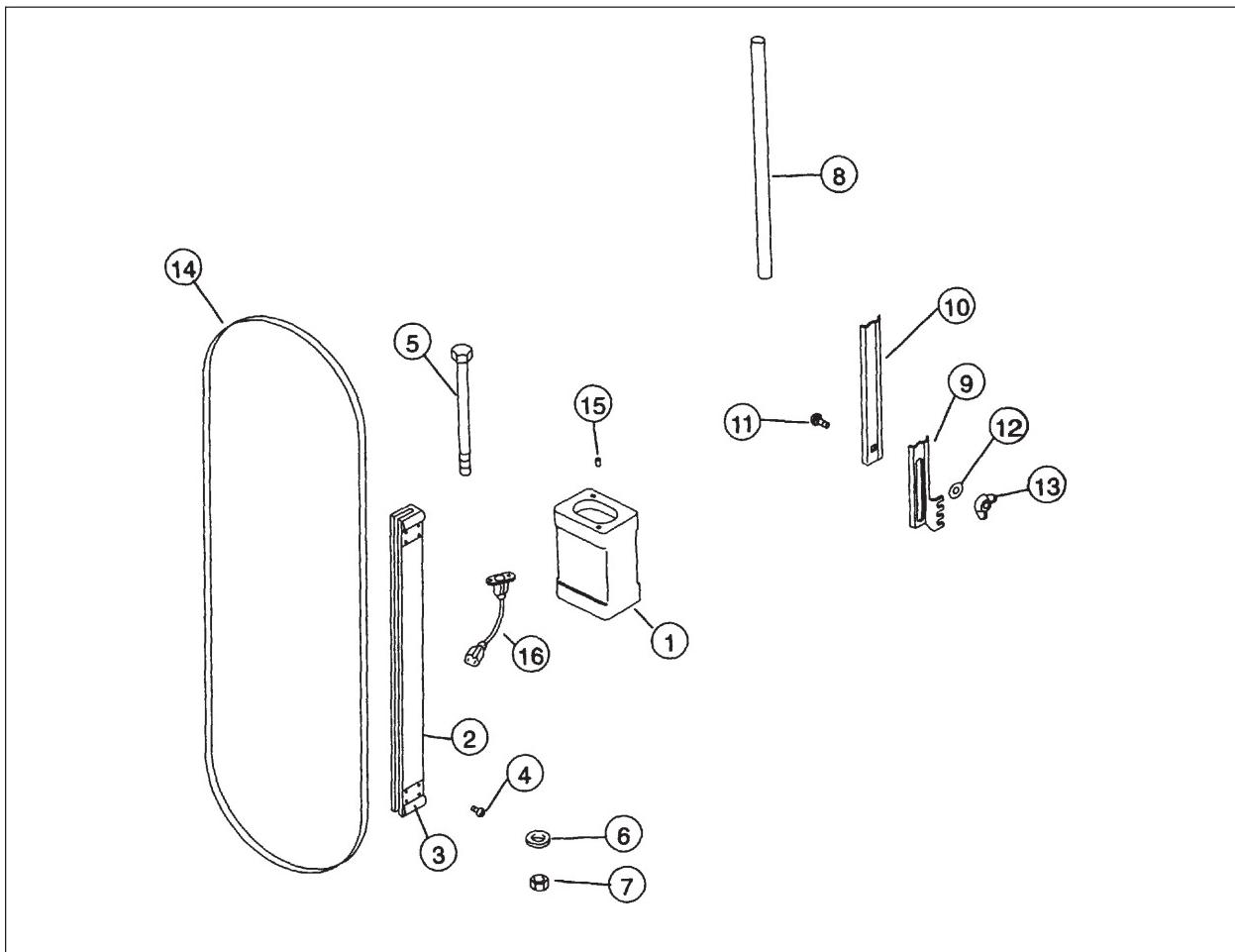
Ref No.	Part. Number	Description	Qty	Ref No.	Part. Number	Description	Qty	Ref No.	Part. Number	Description	Qty
1	5783831	Housing Gearbox	1	15	5783961	Key (5x5x18)	1	29	5784121	Bushing	1
2	5629151	Bearing (6206ZZ)	1	16	5783971	Bushing/Spacer	1	30	5513800	Cover, Bearing	1
3	9100441	Bearing (6200ZZ)	3	17	5783981	Gear	1	31	5784141	Cover, Bearing	1
4	5783851	Bearing (6303ZZ)	1	18	5783991	Shaft (with gear)	1	32	5784151	Cover, Bearing	1
5	5783861	Plug	2	19	5784011	Key (5x5x40)	1	33	5784161	Screw, Pan Head (M5x0.8x8)	9
6	5783871	Seal, Oil (30x7)	1	20	5513824	Pin, Parallel (5x20)	2	34	5784171	Screw, Pan Head (M6x1x10)	8
7	5783881	Seal, Oil (17x40x7)	1	21	5784031	Key (7x7x20)	2	35	5784181	Pulley, Gear Box	1
8	5783891	Plug, Drain (1/8x28PT)	1	22	5784041	Ring, Retaining (S30)	3	36	5784191	Screw, Set (M6x1x10)	2
9	5783901	Plug (3/8x19PT)	1	23	5784051	Seal, Oil	1	37	5784211	V-Belt (A50)	1
10	5783911	Glass, Oil Level	1	24	5784061	Dog, Clutch	2	38	5784221	V-Belt (A35)	1
11	5783921	Gear	1	25	5784071	Pin, Roll (5x30)	2	39	5784231	Pin, Roll (4x16)	1
12	5783931	Bearing (3206)	1	26	5784081	Shaft, Clutch	1	40	5518281	Oil, Gear Box 500cc (not shown)	1
13	5783941	Ring, Internal Snap (R62)	1	27	5784091	Knob	1				
14	5783951	Shaft (with gear)	1	28	5784111	Pulley	1				

Exploded View – Gearbox – Models 8201VS and 8203VS



Parts Listing – Gearbox – Models 8201VS and 8203VS

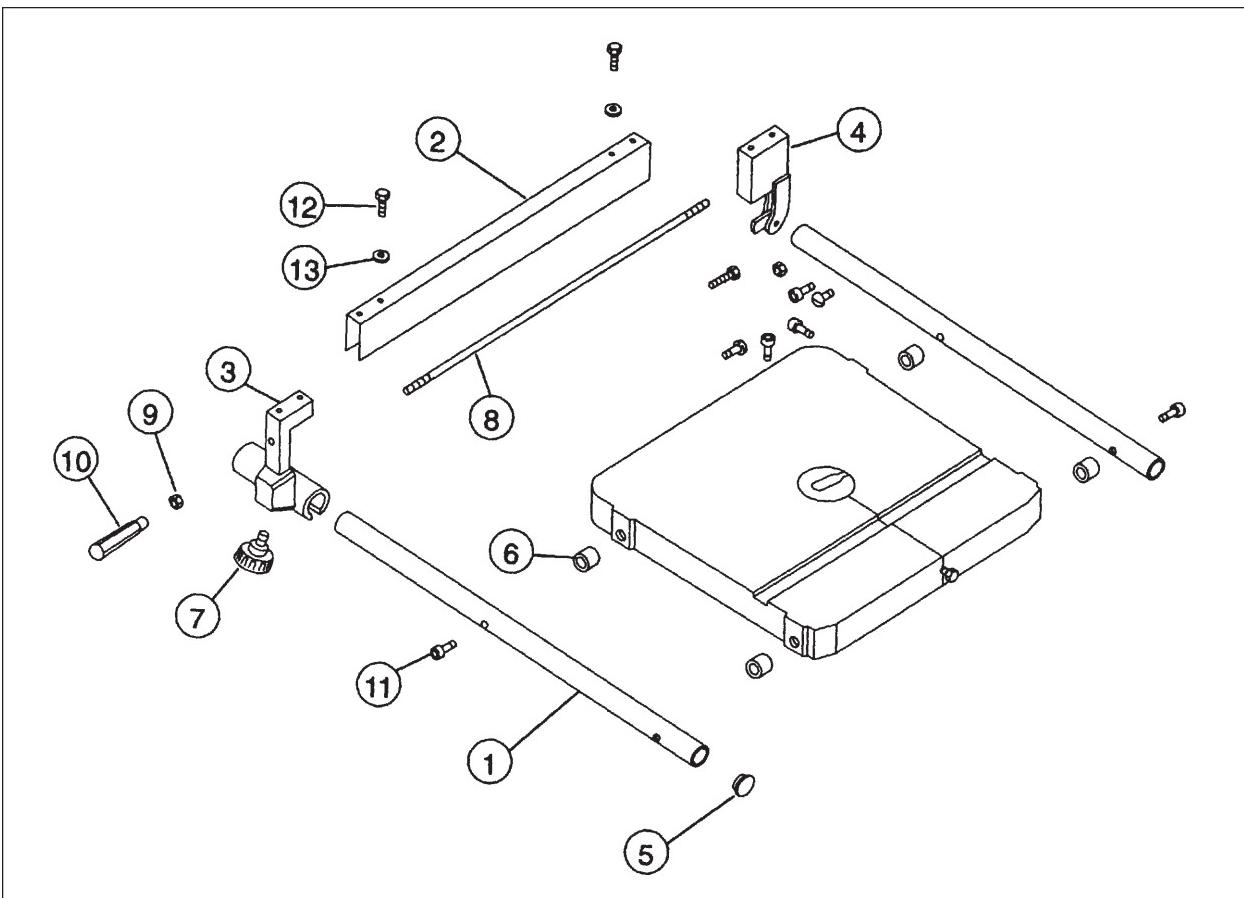
Parts List – Optional Riser Block – All Models



27

Ref No.	Part. Number	Description	Qty
1	5784511	Block, Riser	1
2	5784521	Guard, Blade	1
3	5784531	Hook, Bracket	2
4	5784541	Screw, Self Tapping	4
5	5784551	Screw, Hex Head (M16x2x200)	1
6	5784561	Washer (M16)	1
7	5784571	Nut (M16)	1
8	5784581	Post, Guide	1
9	5784591	Guard, Upper Wheel Blade	1
10	5784611	Extender, Blade Guard	1
11	5784621	Bolt, Carriage (M8x15)	1
12	5784631	Washer (M8)	1
13	5782581	Nut, Wing (M8)	1
14	5784641	Blade, Saw (Metal Cutting)	1
	5784681	Blade, Saw (Wood Cutting)	1
15	5784651	Pin, Dowel	2
16	5784661	Cord, Extension Power (1-Phase)	1
	5784671	Cord, Extension Power (3-Phase)	1

Parts List – Optional Rip Fence – All Models



28

Ref. No.	Part. Number	Description	Qty
1	5784811	Rail, Guide	2
2	5784821	Fence, Rip	1
3	5784831	Seat Assembly, Clamp	1
4	5784841	Clamp Rail	1
5	5784851	Plug (7/8)	4
6	5784861	Spacer	4
7	5784871	Knob	1
8	5784881	Bar, Adjusting	1
9	5784891	Nut (3/8x16UNC)	1
10	5784911	Handle	1
11	5784921	Screw, Socket Head Cap (M8x30)	4
12	5784931	Screw, Hex Head (M6x12)	2
13	5782981	Washer (M6)	2
	5784941	Gauge Assembly, Miter (Not Shown)	1

Notes:



WMH Tool Group
2420 Vantage Drive
Elgin, IL 60123
Phone: 847-274-6848